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AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions, and listings, of claims in the application.

Please cancel Claims 4, 20, 36, 40 and 45.

Listing of Claims

1. (Cancelled)
2. (Currently Amended) The method of claim 19, wherein the step of preparing the solution comprises:
 - providing an aqueous solution of an inorganic metal salt;
 - providing an organic solvent; and
 - mixing the inorganic metal salt solution and the organic solvent in proportions so that a desired metal salt concentration and a desired ratio of organic solvent to water are achieved.
3. (Previously Presented) The method of claim 19, further comprising the step of neutralizing the solution after the incubation.
4. (Cancelled)
5. (Currently Amended) The method of ~~claim 4~~ claim 19, wherein the dispersant is added prior to the incubation.
6. (Currently Amended) The method of ~~claim 4~~ claim 19, wherein the dispersant is added after the incubation.

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7. (Previously Presented) The method of claim 19, wherein the inorganic metal salt contains a metal selected from the group consisting of aluminum, hafnium, silicon, zirconium, titanium, lanthanum, germanium, tantalum, and combinations thereof.

8. (Previously Presented) The method of claim 19, wherein the organic solvent is selected from the group consisting of methanol, ethanol, isopropanol, n-propanol, tert butyl alcohol, n-butanol, acetone, and glycerol.

9. (Previously Presented) The method of claim 19, wherein the concentration of inorganic metal salt ranges from about 0.005 M to about 0.5 M.

10. (Original) The method of claim 9, wherein the concentration of inorganic metal salt ranges from about 0.025 M to about 0.2 M.

11. (Cancelled)

12. (Previously Presented) The method of claim 19, wherein the ratio of organic solvent to water ranges from about 1/1 to about 5/1.

13-15. (Cancelled)

16. (Previously Presented) The method of claim 19, wherein a sol is produced.

17. (Previously Presented) The method of claim 19, wherein the ratio of organic solvent to water ranges from about 1/1 to about 2/1 and a gel is produced.

18. (Previously Presented) The method of claim 19, wherein monodispersed particles are produced.

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19. (Currently Amended) A method of sol-gel processing using an inorganic metal salt and a mixed solvent system, comprising:

preparing a solution including an inorganic metal salt, water, and an organic solvent having a metal salt concentration and a volume ratio of organic solvent to water;

adding a dispersant to the solution; and,

incubating the solution at a temperature ~~less than 90°C~~ from about 20 °C to about 25 °C for a period of time;

wherein the metal salt concentration, volume ratio of organic solvent to water, temperature, and time are selected to provide a sol or a gel having desired characteristics;

wherein the sol or the gel is capable of forming a coating;

wherein the volume ratio of organic solvent to water ranges from about 1/1 to 10/1; ~~and~~

wherein nanosized particles are produced; and,

wherein the time ranges from about one minute to about 72 hours;

~~wherein the temperature ranges from about 20 °C to about 25 °C and wherein nanosized particles are produced.~~

20-33. (Cancelled)

34. (Currently Amended) A method of producing a sol from an inorganic metal salt at room temperature comprising:

preparing a solution including an inorganic metal salt, water, and an organic solvent having a metal salt concentration and a volume ratio of organic solvent to water;

adding a dispersant to the solution; and,

incubating the solution at room temperature for a period of time;

wherein the metal salt concentration, volume ratio of organic solvent to water, and time are selected to provide a sol having desired characteristics;

wherein the sol is capable of forming a coating;

wherein the volume ratio of organic solvent to water ranges from about 1/1 to about 10/1;

~~and~~

wherein the sol contains nanosized particles; and,

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wherein the time ranges from about one minute to about 72 hours.

35. (Original) The method of claim 34, further comprising the step of neutralizing the solution after the incubation.

36. (Cancelled)

37. (Original) The method of claim 34, wherein the inorganic metal salt contains a metal selected from the group consisting of aluminum, hafnium, silicon, zirconium, titanium, lanthanum, germanium, tantalum, and combinations thereof.

38. (Original) The method of claim 34, wherein the organic solvent is selected from the group consisting of methanol, ethanol, isopropanol, n-propanol, tert butyl alcohol, n-butanol, acetone, and glycerol.

39. (Currently Amended) The method of claim 34, wherein the concentration of inorganic metal salt ranges from about 0.005 M to about 0.5 M.

40. (Cancelled)

41. (Original) The method of claim 34, wherein the temperature ranges from about 20 °C to about 25 °C.

42. (Original) The method of claim 34, further comprising drying the sol to produce a particle powder.

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43. (Currently Amended) A method of producing monodispersed particles at room temperature, comprising:

preparing a solution including an inorganic metal salt, water, and an organic solvent having a metal salt concentration and a volume ratio of organic solvent to water;

adding a dispersant to the solution; and

incubating the solution at room temperature for a period of time;

wherein the metal salt concentration, volume ratio of organic solvent to water, and time are selected to provide a sol having desired characteristics;

wherein the sol is capable of forming a coating;

wherein drying the sol to produce a powder of monodisperse particles; and

wherein the volume ratio of organic solvent to water ranges from about 1/1 to about 10/1;

and,

wherein the time ranges from about one minute to about 72 hours.

44. (Original) The method of claim 43, further comprising the step of neutralizing the solution after the incubation.

45. (Cancelled)

46. (Original) The method of claim 43, wherein the inorganic metal salt contains a metal selected from the group consisting of aluminum, hafnium, silicon, zirconium, titanium, lanthanum, germanium, tantalum, and combinations thereof.

47. (Original) The method of claim 43, wherein the organic solvent is selected from the group consisting of methanol, ethanol, isopropanol, n-propanol, tert butyl alcohol, n-butanol, acetone, and glycerol.

48. (Original) The method of claim 43, wherein the concentration of inorganic metal salt ranges from about 0.005 M to about 0.5 M.

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49. (Cancelled)

50. (Previously Presented) The method of claim 43, wherein the volume ratio of organic solvent to water ranges from about 5/1 to about 10/1.

51. (Original) The method of claim 43, wherein the temperature ranges from about 20 °C to about 25 °C.

52-59. (Cancelled)